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Professional Standard of the People's Republic of China

AQ 3028-2008

Safety Code for Operation at Confined Spaces in Chemical Manufactory

化学品生产单位

受限空间作业安全规范

(English Translation)

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Safety Code for Operation at Confined Spaces in Chemical Manufactory

1 Scope

This standard specifies safety requirements and responsibility requirements for operation at confined space in chemical manufactory as well as management for *Safe Operation Certificate for Operation at Confined Space*.

This standard is applicable to operation at confined space in chemical manufactory.

2 Normative References

The following normative documents contain provisions which, through reference in this text, constitute provisions of this standard. For dated references, subsequent amendments (excluding corrections), or revisions do not apply to this standard. However, parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies.

GB/T 13869	*General Guide for Safety of Electric User*
GBZ 2	*Occupational Exposure Limit for Hazardous Agents in the Workplace*
AQ 3025-2008	*Safety Code for Work at Height in Chemical Manufactory*
AQ 3022-2008	*Safety Code for Hot Work in Chemical Manufactory*

3 Terms and Definitions

For the purpose of this standard, the following terms and definitions apply.

3.1

confined spaces

various tower, caldron, trench, tank, furnace, drum, pipeline, container as well as basement, inspection well, pit (pool), sewer or other closed or semi-closed sites in chemical manufactory

3.2

operation at confined spaces

operation carried out by entering into or probing into confined space in chemical

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manufactory

4 Safety Requirements for Operation at Confined Space

4.1 Operation certificate management is carried out for operation at confined space, and *Safe Operation Certificate for Operation at Confined Space* (hereinafter referred to as *Operation Certificate*) shall be transacted before operation.

4.2 Safety isolation

4.2.1 Effective isolation measures shall be taken for pipeline connecting confined space and other systems as well as possibly endangering safety operation.

4.2.2 Insertion of stop plate or dismantlement of one-section pipeline which could not be replaced by water seal or closing valve may be adopted for pipeline safe isolation.

4.2.3 Holes and openings connected with confined space as well as possibly endangering safety operation shall be tightly blocked.

4.2.4 Where confined space is equipped with electric equipment like stirrer, power cut, locking and warning board hanging shall be carried out after shutdown.

4.3 Cleaning or replacement

Prior to operation at confined space, cleaning or replacement shall be carried out for confined space according to features of material filled in (having been filled in) the confined space with the following requirements met:

4.3.1 The oxygen content is generally within the range 18% ~ 21% and it shall not be greater than 23.5% in oxygen-enriched environment.

4.3.2 Concentration of toxic gas (substance) shall meet the requirements of GBZ 2.

4.3.3 Concentration of inflammable gas: if lower explosion limit of detected gas or steam is greater than or equal to 4%, the detected concentration shall not be greater than 0.5% (volume percentage); if lower explosion limit of detected gas or steam is less than 4%, the detected concentration shall not be greater than 0.2% (volume percentage).

4.4 Ventilation

Measures shall be taken to maintain good air circulation for confined space.

4.4.1 Open facilities connecting to atmosphere like manhole, handhole, material hole, air door, soot door, etc. for natural ventilation.

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